

Role of mother tongue based multilingual environment in ensuring quality Early Childhood Education (ECE) programme in India

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Abstract

Quality Early Childhood Education (ECE) programmes with a focus on usage of child's mother tongue enhance well-being of children, leads to gains in performance outcomes inclusive of foundational language and literacy skills. Emphasizing the critical role of mother tongue based learning in early years, the New Education Policy (2020) advocates for mother tongue as medium of instruction promoting children's learning in additional languages to strengthen cognitive outcomes among children. The present study aimed to examine effectiveness of Mother Tongue Based Early Learning and Parent + (MTELP+) programme and usage of language by teacher on preschool environment and teaching-learning practices. Anganwadi Assessment Scale (2022) was utilized to collect data from 1448 Anganwadis (Government preschools) located in 12 tribal districts of Odisha, India where 10 tribal languages were predominant. The findings underscored the strategically planned decision of VLF partnership with Government to scale up the MTELP+ programme to ensure its sustainability. The significant role of mother tongue in creating a responsive preschool environment, enhancing effective teaching-learning practices, and improving teacher-child interactions was showcased. Crucial components of mentoring and supportive supervision need to be continued for advancing quality early childhood education.

Keywords : *Early Childhood Education, Curriculum Transaction, Mother Tongue based Learning and Parent + Programme, Teacher-child Interaction*

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Introduction

Language a valuable repository of culture and identity is imperative for communication and essential for academic success. As one of the critical domains of development, the role of language and its interrelatedness for advancement of knowledge, thinking and reasoning is undisputable (Dhankar, 2009). Children organically learn early language and literacy competencies in interactions with their teachers, parents and caregivers in context of their immediate environment. Enriched, high quality language environments with extensive opportunities to listen and respond are beneficial in laying strong foundations for later life.

Efforts to continue early and primary education in children's mother tongue has multiple benefits. When children get opportunities to learn in a language familiar to them, they are spared from the dual burden of learning a new language and simultaneously comprehending new concepts. Learning in their mother tongue strengthens children's cognitive skills fostering their creative, critical thinking and problem solving competencies. Opportunities to speak in their mother tongue, facilitates children to articulate their thoughts and questions leading to robust learning experiences and thereby boosting their self-esteem (Ball, 2011; Cummins, 1999). Transacting curriculum in children's mother tongue ensures active engagement of children as their enthusiasm and interest is sustained when they receive multiple opportunities to hear and speak a language that is familiar to them. Further seamless transitions to primary school are enhanced when children learn in their mother tongue (Kioko et. al. 2014). Opportunities to learn in mother tongue further results in enhanced student participation, improved academic outcomes and a decrease in dropout rates [Centre for Early Childhood Development and Research (CECDR), 2021; National Education Policy (NEP), 2020; Nishanthi, 2020; Seid, 2016].

Beginning learning in children's mother tongue and mastering it, supports the successful learning of a second language as the transfer of key skills is quick and efficient (UNICEF, 2019). While the children are capable of acquiring more than one language through a natural acquisition process, they receive limited opportunities as teachers and parents are not proficient or familiar with the dominant language. Teaching children in a language familiar to teachers augments teacher's ability to engage effectively with children. Speaking in mother

tongue further removes apprehensions among parents and community and they are able to communicate effectively with teachers. With strengthening of home-school partnerships, parents actively engage in supporting learning activities of their children, and teacher-parent interactions are meaningful (Gupta, Rajesh, Pai-Samant & Gupta, 2019; Mullis et al, 2017).

Despite numerous advantages of learning in mother tongue, a large percentage of children continue to access education in a language that they do not understand or speak. Forced to learn in an unfamiliar language, nearly 250 million children despite of being enrolled in schools, lack in basic literacy and numeracy skills (UNESCO, 2008 & 2019). This learning crisis and inequality in education is further exacerbated as children progress to higher grades. Children who fail to develop language and literacy skills in their early years have a weak foundation that diminishes their interest in education as they find the future academic tasks increasingly challenging (Kumar et. al., 2023).

Positioning of Early Childhood Care and Education and Multi-lingual Education in India

Early Childhood Care and Education in India is largely governed by Ministry of Women and Child Development (MWCD) through their flagship programme, Integrated Child Development Schemes (ICDS) conceptualized in 1975. The scheme continues to be a collaborative effort of the central and state governments to provide preschool services to 3-6 years children in urban, rural and tribal areas. Aligning with the life cycle approach this comprehensive scheme is implemented through Anganwadi centers focusing on health, nutrition and preschool education of children. The term ‘Anganwadi’ means ‘courtyard’ in Hindi and is a play school where all the Early Childhood Care and Education (ECCE) activities are carried out by Anganwadi worker (Preschool teacher).

The evolution of education policies in India from 1956 till date is reflective of progressive understanding of linguistic diversity of India seen as a strength aiming to enhance the educational outcomes among children. The New Education Policy (NEP) 2020 reiterates its emphasis on multilingualism and the power of language, providing children the choice to learn three languages. However implementing the NEP 2020 with fidelity particularly in

promoting the use of home language where ever feasible, as the medium of instruction at least till grade 5 but preferably till Class 8th and beyond presents several challenges. The language diversity of India adds to complexities of implementing a uniform policy in the country as in many areas multiple languages co-exist. At times variability in policy implementation in different states leads to inconsistent learning opportunities experienced by children. Some of the challenges informed by research are lack of appropriate teaching strategies due to inadequate teacher preparedness to deliver strategic multilingual education; lack of textbooks, story books, print and learning materials in regional and local languages (Mishra & Mishra, 2024; Dhokare et. al., 2023). This gets further exacerbated by inadequate infrastructure in schools with no libraries and language labs. Many times parents are not aware of benefits of mother tongue education and may prioritize dominant languages undermining the value of mother tongue (Dhokare et. al., 2023).

With nearly 7,117 unevenly distributed languages spoken across the world, India ranks fourth among the most linguistically diverse countries with a total of 456 languages spoken across the nation (World Economic Forum, 2022). However, the Eighth Schedule of Indian Constitution consists of 22 languages. Given the rich diversity and magnitude of languages in India, being multilingual should be an integral part of social and cultural ethos of India. States like Odisha, Assam, Chhattisgarh, Jharkhand and Rajasthan have recognized the importance of aligning teaching-learning materials with children's linguistic backgrounds to create a fertile environment for their young population (McCaffrey and Jhingran, 2024).

Odisha comprises of third largest population of scheduled tribes in India and is home to 62 tribal communities (Census, 2011). These 62 tribal communities speaking 21 languages of which only seven have their own scripts. The recent efforts made by the government to reach out to their children in their mother tongue as a medium of instruction and printing the textbooks in 21 tribal languages are laudable (Sahu, 2024). During 2016-2019, Department of Women and Child Development (DWCD), Odisha and Van Leer Foundation (VLF) implemented a Mother Tongue Based Early Learning and Parent plus (MTELP+) programme. The intent was to scale up the model of mother tongue based early learning in 7202 Anganwadis in 10 tribal languages serving nearly 2,50,000 under six children across 12 districts in Odisha.

This programme commenced with a baseline study to understand the context and its challenges. Responsive training and capacity building programme was developed, to promote usage of mother tongue based multilingual education in Anganwadis. Six day residential trainings were organized for various stakeholders inclusive of 6388 AWW's and 1200 supervisors trained over the period of three years. The trainees were trained on various aspects such as mother tongue based multilingual education, child development, brain development in early years, development of contextual materials and supportive supervision. Different district level officers were also oriented on ECCE across all 12 districts. A Programme Management Unit (PMU) inclusive of District Coordinators recruited for 12 districts, CDPOs and supervisors further supported the programme through monitoring and mentoring/ hand holding of AWW's to ensure effective implementation of MTELP+ programme.

This paper is a part of a larger study that was conducted to understand the effectiveness of MTELP+ training on the overall quality provisions of Anganwadi centre. The specific objectives of this paper are:

- To assess the effectiveness of MTELP+ training of Anganwadi workers (AWWs) with reference to preschool environment, curriculum transaction, teacher-child interactions.
- To assess the effectiveness of language used by Anganwadi workers on curriculum transaction, teacher-child interactions and preschool environment.
- To assess the role of teaching-learning materials in curriculum transaction, teacher-child interactions and child friendly environment.
- To assess the relationship between the MTELP+ training and different provisions of quality ECE.

Methods

The present study intended to measure the role of mother tongue and teaching-learning materials in teaching-learning practices and teacher child interactions in Anganwadi centres of Odisha. The MTELP+ programme, implemented by PMU of DWCD, Government of

Odisha in partnership with VLF was able to promote/ advocate mother tongue based multilingual learning for young children in intervention districts.

Sample and Sampling

The end line study conducted in 2019-20, with a sample size of 1440 Anganwadis centres (hereafter Anganwadis) was calculated using scientific method and was equivalent to 20 percent of the population identified during baseline. The 20 percent sample represented the 5th quartile of the total population of 7202 Anganwadi centres. Both the data at the district level and languages (mother tongue of children, also the language of curriculum transaction) were considered as the major criteria for selecting the sample using stratified random sampling. The population was stratified at two levels, the first being at district level. The 20 percent sample from 12 districts (Kandhamal, Kalahandi, Malkangiri, Rayagada, Gajapati, Koraput, Ganjam, Mayurbhanj, Sundergarh, Keonjhar, Sambalpur & Dhenkanal) was first selected proportionally keeping the baseline data as total population. At the second level, the criteria of 10 languages (Santal, Soura, Kui, Munda, Kissan, Kuvi, Koya, Juang, Oram & Bonda) was also taken into consideration while selecting the sample randomly. While the initial proposed sample was 1440 Anganwadis, in actual 1448 Anganwadis were observed and data for the same were analyzed.

The selection criteria of 1448 Anganwadis to be included for the study mandated presence of trained AWWs and usage of tribal languages. The field investigators visited Anganwadis and observed the center for 4-5 hours, from opening till closing of the centre. One Anganwadi was observed by one field investigator at a time and in a day. Likewise, all selected centers from the villages, blocks and districts were observed. The observation was non-participative and all AWW's from 1448 Anganwadis were interviewed.

Tool

Anganwadi Assessment Scale (AAS) developed by Sharma, Rajesh, Meenai & Menon (2022) was utilized for observing the Anganwadis and their processes. The tool comprised

of five sections. The section I captured the background information of Anganwadis and section II captured the diversity and inclusion of children. Section III consisted of six dimensions namely Physical Infrastructure (14), WASH Facilities (13), Child Friendly Environment (6), Curriculum Transaction (16), Teacher-Child Interaction (9) and Safety of the Children (5). The observed responses were recorded on 3 – point Likert scale.

Section IV included a list of 19 different Teaching-Learning Materials (hereafter play materials). The observer was required to ensure availability of play materials and their usage in tribal language, Odia or Hindi/English language. Section V of the tool was utilized to observe all activities that were conducted by AWW/AWH. Observation of activities was recorded on different parameters namely language used by AWWs to conduct activities, language in which AWWs responded to children during activities conducted in the Anganwadis, play materials used by the AWWs, participation level of children and duration of a particular activity. This section was developed to understand preschool environment, teaching-learning practices and interactions among AWWs & children in different languages namely, mother tongue/tribal language, Odia, Hindi/English etc.

The process of developing the observation tool included an item bank generated subsequent to the review of national and international similar tools and measures utilized for observation of quality of environment. Expert consultations were organized to validate the content of the observation tool before its finalization. The process ensured the comprehensiveness of various dimensions of the tool. Translation and back translations were conducted to quality check the accuracy in Odia language. Field investigators received training on how to effectively use the tool during their observations at Anganwadis equipping them with necessary skills to implement the tool accurately, ensuring consistent data collection and observation practices. Subsequently, the tool was piloted in different Anganwadi's in Delhi and Odisha to ensure its effectiveness, usability and relevance. Statistical measures such as item analysis, factor analysis and confirmatory factor analysis were used to establish psychometric properties of the tool. Cronbach's alpha reliability for all the domains of the tool were between .61 to .91 and for the overall tool it was found to be .93 which indicated good reliability and it has sound evidence of convergent validity and factorial validity (Sharma et. al., 2022).

Challenges and Limitations

Rigorous planning was done for data collection in far reached areas, yet research team faced challenges. Delays in data collection due to unforeseen circumstances including elections, cyclone and excessive heat wave. Challenging terrains in forest and hilly areas, insurgency, limited network coverage posed hindrance to data collection efforts. Lack of baseline data also posed a significant obstacle to conduct meaningful comparisons between baseline and end line results. Consistent and continuous efforts, robust training for field staff, regular monitoring and quality checks were made to ensure successful research outcomes.

Analysis

All the data were categorized and tabulated in MS Excel sheet. Then after, data were imported into SPSS and different statistical techniques were applied such as mean, standard deviation and t-test to examine reliability of difference between the groups. Coefficient of correlation was also used to examine relationships between variables. In this research article a two-group comparison was employed to examine the magnitude of curriculum transaction and teacher-child interaction in Anganwadis. Groups were formed based on training received by AWW's on MTELP+, language used by AWWs in Anganwadis (MT & Odia) and availability and utilization of play materials.

Results

All the AWWs were females and majority of them (82%) were from the village itself. Of the total 1448 AWWs interviewed, nearly 40% of AWWs were in the age group of 31-40 years. The education levels of AWWs were low, given nearly 41.4 % had completed their class 10 education and 31.6% had completed their class 6th – 9th. However they had long tenures of working as AWWs (37.1% AWWs had an experience of 5-10 years, 19% had an experience of 10-15 years and 24.9% had more than 20 years of experience). While the

objective of the study mandated selection of trained AWWs, a majority of 86.97% AWWs were trained while 13.1% had not received MTELP+ training. The reasons for not receiving the training were AWW being ill or on leave during the time of training, newly recruited AWWs, or AWWs who were recently transferred.

Table 1. *Descriptive Statistics of Quality of Anganwadi Assessment Scores and t-value for the Difference Between the Two Groups Based on Training Received by AWWs on MTELP+*

	Training Received			Training Not Received			t	p	Cohen's d
	M	SD	n	M	SD	n			
Preschool Environment	16.35	3.76	1259	14.72	3.98	189	5.52**	.001	0.421
Curriculum Transaction	31.69	6.25	1259	29.99	6.72	189	3.44**	.001	0.262
Teacher-Child Interaction	24.34	2.75	1259	23.13	3.73	189	5.37**	.001	0.369
Anganwadi Asses. Score	80.93	11.51	1259	76.14	12.78	189	5.25**	.001	0.393

** $P \leq .01$ & * $P \leq .05$

Table 1 above reveals differences between the two groups of trained and untrained AWW's. The overall score of Anganwadi assessment on quality provisions was found to be high for trained AWW's as the mean score was 80.93 as compared to Anganwadis where untrained AWWs were working as the mean score was 76.14. The difference between both groups was found statistically significant ($t = 5.25$, $p < .001$). Dimension wise scores were also found to be statistically significant, showing similar trends for preschool environment, curriculum transaction, teacher-child interaction. Thus it can be inferred that Anganwadis where AWWs were trained in MTELP+ were able to run Anganwadi centres effectively as compared to AWW's who had not received training.

From the below table 2 it is clear that training of AWWs on MTELP+ is associated with medium of instruction in the Anganwadis ($r = .140^{**}$, $p < .001$), preschool environment ($r = .144^{**}$, $p < .001$), curriculum transaction ($r = .090^{**}$, $p < .001$) and teacher-child interaction ($r = .140^{**}$, $p < .001$) and utilization of teaching-learning material in Anganwadis ($r = .124^{**}$, $p < .001$). The MTELP+ training helped the AWWs to transact the curriculum effectively and efficiently. It further enhanced teacher-child interactions. Using appropriate

Table 2. Coefficient of Correlation Between Training on MTELP+ with Other Variables under Study

	Variables	N	Mean	SD	1	2	3	4	5	6
1.	MTELP+ Training	1448	1.87	.337	1					
2.	Medium of Instruction (MT)	1448	2.52	.614	.140**	1				
3.	Preschool Environment (PSE)	1448	16.14	3.825	.144**	.054*	1			
4.	Curriculum Transaction (CT)	1448	31.47	6.341	.090**	.119**	.651**	1		
5.	Teacher-Child Interaction (TCI)	1448	24.18	2.926	.140**	.196**	.399**	.604**	1	
6.	Utilization of Play Materials	1448	33.74	8.801	.124**	.067*	.531**	.622**	.370**	1

** $P < .01$ & * $P < .05$

Table 3. Descriptive Statistics of Curriculum Transaction, Teacher-Child Interaction & Preschool Environment Scores and t-Value for the Difference Between the Two Groups Based on Language Used by AWWs in Anganwadis (as informed & observed)

	Mother Tongue			Odia			t	p	Cohen's d
	M	SD	n	M	SD	n			
Curriculum Transaction	39.82	6.590	1118	39.14	7.182	330	1.620	.105	0.098
Teacher-Child Interaction	24.40	2.743	1118	23.44	3.375	330	5.281**	.001	0.312
Preschool Environment (PSE)	16.17	3.733	1118	16.03	4.127	330	.559	.576	0.035

** $P < .01$ & * $P < .05$

medium of instruction i.e. mother tongue (tribal) and Odia also helped the AWWs to use play materials effectively.

The above table 3 informs the differences between the two groups of AWW's based on language used in the Anganwadis by them, specifically mother tongue and Odia. From the results it appeared that AWWs using mother tongue in their Anganwadis were able to transact curriculum more effectively and efficiently as the mean scores for two groups were 39.82 and 39.14 respectively. But the mean scores of the two groups were not found statistically significant ($t = 1.62$, $p > .05$). Secondly, the results further informed that AWWs using mother tongue in their Anganwadis were able to make their interaction with children more efficient as the mean scores for two groups were 24.40 and 23.44 respectively. The mean scores of the two groups were also found to be statistically significant ($t = 5.28$, $p < .001$). Lastly, on the domain of preschool environment the difference between both the groups of

AWWs were not found statistically significant ($t = .559$, $p \leq .001$). On the whole it can be said that mother tongue plays a crucial role in effective running of the Anganwadis as it facilitates teacher child interactions.

The table 4 below reveals the differences between the two groups of Anganwadis based on availability of play materials in Anganwadis. From the results it appeared that AWWs were able to transact their curriculum effectively where play materials were available in the Anganwadis as the mean scores of the two groups were found 45.10 and 38.84. The reliability of the differences between the two groups was also found statistically significant ($t = 12.612$, $p \leq .001$). Similar findings were observed for teacher child interactions. Anganwadis where play materials were available during teacher child interactions were observed to be better as compared to Anganwadis where no play materials were available as the mean scores of both the groups were found 25.33 and 24.01. The reliability of the difference between the groups were found statistically significant ($t = 5.88$, $p \leq .001$). Lastly, availability of play material supported the AWWs in providing a good preschool environment when compared to Anganwadis where play materials were not available to AWWs. The mean scores of both Anganwadis were found 18.31 and 15.81 and the difference between both the groups of Anganwadis was also found statistically significant ($t = 8.65$, $p \leq .001$).

Table 4. *Descriptive Statistics of Curriculum Transaction, Teacher-Child Interaction & Preschool Environment Scores and t-Value for the Difference Between the Two Groups Based on Availability & Utilization of Play Material by AWWs in Anganwadis (as observed)*

	Availability and Non-Utilization of Play Material			Availability and Utilization of Play Material			t	p	Cohen's d
	M	SD	n	M	SD	n			
Curriculum Transaction	38.84	6.638	1257	45.10	4.450	191	12.612**	.001	1.107
Teacher-Child Interaction	24.01	2.999	1257	25.33	2.055	191	5.881**	.001	0.513
Preschool Environment (PSE)	15.81	3.874	1257	18.31	2.601	191	8.656**	.001	0.757

** $P \leq .01$ & * $P \leq .05$

Discussion

International Mother Language Day is celebrated on February 21st to promote the significance of cultural and linguistic diversity and to advocate for multilingualism as a means to foster harmonious and sustainable societies. Evidence informs that agencies at global and national level advocate for mother tongue education with an exposure to additional languages from the early years.

Findings from research focused on four major themes and these have been discussed in detail. Results from table 1 revealed AWWs who were trained on MTELP+ programme performed better in terms of creating preschool environment in Anganwadi ($t = 5.17, p < .001$), curriculum transaction ($t = 3.44, p < .001$), teacher-child interaction ($t = 5.37, p < .001$) as compared to their counterpart who did not receive MTELP+ training. Thus the AWWs of two different groups differed significantly and based on the results it can be claimed that training on MTELP+ played a significant role in implementing a quality ECE programme.

The obtained significant differences between the AWWs of two different groups can be attributed to the fact that Mother Tongue based training programme strengthened capacities of AWW's to understand the children's context and respond favorably. The outcomes envisaged through MTELP+ training were to ensure children in Anganwadis have an access to learning in their mother tongue. Learning in a familiar language were likely to facilitate children learn early literacy and numeracy skills and foster their school readiness skills thereby preparing them for primary education. These pedagogical shifts were likely to strengthen cognitive and language skills among children which further supported acquisition of official school language and smooth transition from Anganwadis (non-formal education system) to primary schools (formal education system). Nearly 25% of children in India face moderate to severe learning disadvantage due to use of an unfamiliar language for instruction; tribal children perform significantly better in mother-tongue medium classrooms (UNICEF, 2019). Awopetu (2016) found that students from experimental group in Nigeria who were taught in their mother tongue as the medium of instruction showed significant gains in their performance outcomes when compared with students who were taught in English and not

their mother tongue.

Such training on MTELP+ helped the AWW's to transact the curriculum effectively and prepare play materials to support the children in learning literacy and numeracy that was contextually appropriate and culturally relevant. The trainings were likely to create a favorable environment in the Anganwadis to attract more and more children from the communities. Using familiar (tribal) languages in Anganwadis can significantly bridge gap between children's home language and language used at Anganwadi. These teaching-learning practices will enhance immediate comprehension, help better understand concepts and promote scholastic achievements in later life. Relying on languages alien to children like Odia/Hindi/English in Anganwadi and primary schools as medium of instruction will create barriers for children to comprehend the curriculum, leading to confusion, disengagement and higher dropout rates. Rao (2022) mentioned that in Andhra Pradesh the model mother tongue-based multilingual education (MTBMLE), covering seven tribal languages, was currently being implemented in 1,350 schools located in tribal parts of various districts. In 2022, the Assam education department stated that they will seek to introduce four indigenous languages as new media of instruction.

Inclusion of local stories and poems, helped the AWW's to make their programme more participatory (UNICEF, 2024; Benson, 2004). The thick descriptions from observations revealed that AWWs equipped with MTELP+ trainings were able to provide child-centered environment, conduct developmentally appropriate activities, provide opportunity to the children in Anganwadis to express, to share, to ask questions, to solve problems in their mother tongue. The children exhibited greater self-confidence with high motivation levels. Additionally, Mother Tongue based Early Learning training programmes helped the AWW's to encourage parents to participate in their children's education. Utilizing a familiar language made the parents feel comfortable to participate in the discussions and result in effective engagement between parents and educators (Benson, 2004; Cummins, 2000; Gupta et. al, 2019).

Results from table 2 revealed that MTELP+ trainings of AWWs were associated with preschool environment, teaching-learning practices, teacher-child interaction, utilization of teaching-learning material whereas medium of instruction (mother tongue) was also found

significantly related with transactional approaches to curriculum, teacher-child interactions and availability & utilization of learning materials. Based on the results it can be inferred that having mother tongue as medium of instruction will improve teaching-learning practices while implementing curriculum, enrich preschool environment and enhance interaction between the children and AWWs. This further implies that using mother tongue as medium of instruction by AWWs enhances quality of ECE programme and improves child learning outcomes.

Mother tongue in ECE plays a vital role to a great extent especially when the child starts learning about the outer world. It represents the first language of the child in which he/she responds to immediate environmental stimulus. Evidence informs that children develop critical, reasoning and problem solving skills when they get opportunities to learn in their first language (Bender et. al., 2005). Learning in all domains whether it is cognitive, social or language is deeper, faster and more effective when conducted in mother tongue (UNICEF, 2019; Taylor & Coetzee, 2013). Mother tongue based education enhances the overall, development of the children especially social skills and cognitive development. Much of a child's future social and intellectual development hinges on the milestone of mother tongue (Plessis, 2008). If the AWW's transact the curriculum in mother tongue of the children it will enhance the effectiveness and significance of ECE programme for young children as well as for their parents (Benson, 2004). It is also suggested that the learning environment for children is more effective when parents are meaningfully engaged in the programme through the teacher or service provider (Copple & Bredekamp, 2009). Consequently, it results in developing robust mother tongue concepts and vocabulary which further prepares children transit seamlessly from preschool programme to formal education systems.

The results from Table 3 informed that usage of mother tongue in Anganwadis strengthened the teaching-learning process and teacher-child interactions. During the curricular transaction nearly three fourth of AWWs were speaking and encouraging children to speak in mother tongue. The usage of mother tongue and Odia was observed during diverse activities like storytelling, songs/ rhymes, free/ guided conversations and guided play. During interviews AWWs shared the advantages of including mother tongue as a part of daily routine at Anganwadis. They highlighted the increase in participation and attention of children during

activities. With the usage of mother tongue in tandem with Odia, the children had become expressive, cheerful and comfortable. The AWWs informed that using mother tongue had reduced fear among children attending Anganwadis. These serve and return opportunities between AWWs and children are likely to support the improved neural connections leading to construction of brain architecture resulting in strong foundations for later learning (Center on the Developing Child, 2007).

In addition having a preschool environment supporting the usage of mother tongue informed the effective functioning of Anganwadis. The presence of contextual materials like storybooks, activity books, rhymes/ poem books charts, and flash cards provided opportunities for an environment that was stimulating for children. However, availability of play materials in mother tongue was extremely limited as most of these materials were in Odia. Findings from Table 4 informed that Anganwadis having play materials performed better in curricular transaction ($t = 12.6, p < .001$), had positive teacher-child interactions ($t = 5.9, p < .001$) and a quality preschool environment ($t = 8.6, p < .001$) was observed compared to Anganwadis where limited play materials were available but not utilized.

The presence of play materials in Anganwadis is significant and it enhances the provisions of quality ECE. The observations at Anganwadis informed the availability of a variety of play materials like toys, balls, pebbles/ beads/ stones, abacus, puzzles, dramatic play materials, crayons in more than half of the Anganwadis. Play materials like paints, dramatic play, clay, blocks, puppets, flash cards was available in less than half of Anganwadis. Print materials like charts, picture books, activity books, colouring books, poems and rhyme books were available in more than three-fourth of the Anganwadis (CECDR, 2021). The observations further confirmed that some of the Anganwadis having trained AWWs were able to ensure that children attending their Anganwadis had access to play materials and the children were utilizing the play materials. Close to one third of Anganwadis also demonstrated the presence of locally developed contextual materials. Development of indigenous materials provides opportunities for stimulation, enhances early learning and helps preserve cultural identity (NCERT, 2019). The presence of play materials encouraged interactive and hands-on activities fostering curiosity and critical thinking among children. These few AWWs were able to engage children meaningfully, by providing demonstrations,

opportunities for free and structured play where children could manipulate play materials.

Availability of TLM ensures a good preschool environment, curriculum transaction and teacher-child interaction (Sharma, Rajesh, Meenai & Menon, 2022). The observations once again reiterated the need for active utilization of play materials as only in 50 percent of Anganwadis more than three-fourths of children were participating in activities. Close to one-third of children were meaningfully engaged in activities being conducted in Anganwadis (CECDR, 2021). The availability of contextual learning and play materials provide children with opportunities for exploration, manipulation and creation (Frimpong, 2021). Engagement with learning and play materials ignite children's curiosity and imagination (Gogoi, 2015). The play materials provide opportunities to organize diverse activities that facilitate children to explore independently, make predictions, build on reasoning skills and solve problems (NCERT, 2019). When children get opportunities for sensory stimulation they are actively engaged and their learning is meaningful. Accessibility to play and learning materials provide opportunities for concrete experiences and thereby increase their involvement in Anganwadis. This give a boost to quality interactions between the AWWs and children and foster learning among children. The presence and access to diverse play materials in Anganwadis not only entice children to attend Anganwadis regularly but also lure their peers to enroll in Anganwadis, which enhance their school readiness skills i.e. language, cognitive and numeracy (Sharma & Hussain, 2019). It also releases the burden off their parent's shoulders as temptation to go to Anganwadis would overweigh and children will not be coerced to attend Anganwadi programme.

In addition to effective curriculum transaction and affirmative teacher-child interactions the presence of play materials gave a lift to the preschool environment also. The presence of activity corners having play materials accessible to children, the appropriate display of materials in Anganwadis and display of materials made by children were some of the desirable features observed in Anganwadis. Provision of activity areas promote children to take decisions, learn from their mistakes, discover, learn from trial and error. The sense of achievement from self-learning provides children opportunities to master activities and boost their self-confidence and thereby enhance their self-esteem (NCERT, 2019). They learn to manage their time, regulate their emotions and build on social skills like turn taking, sharing

and empathy. Tribal children as well as other groups of children in India perform significantly better in classrooms where medium of instruction is their mother tongue when compared to their matched counterparts in classrooms where the medium of instruction is another dominant language (Mohanty et al., 2009).

Disappointingly in over half of Anganwadis, the availability of play materials did not ensure the appropriate utilization of play materials. The observations from the Anganwadis informed that while play way/ activity based pedagogy was being used at the Anganwadis only a slightly over one-third AWWs were utilizing play materials during the transaction of curriculum. Evidence informs a seasoned and trained teacher is able to successfully utilize the teaching learning materials to enhance and promote effective learning (Gogoi, 2015). Building rich environment for promoting learning among children is the responsibility of teachers and with proper training their skills can be leveraged to ensure effective learning (Smith et al., 2003).

A few challenges highlighted by supervisors were the limited capacities and knowledge of AWWs which were a barrier to effective curriculum transaction with utilization of play materials. To ensure the effective implementation of mother tongue component at Anganwadis, the AWWs were identified and recruited from the community even though they had low educational qualifications. While training was provided to most of the AWWs their skills to conduct activities, develop and utilize play materials required further strengthening. Further there is a need to include activities strengthening foundational literacy and numeracy among children. The supervisors and Child Development Programme Officer's (CDPO's) also expressed the need to have frequent and recurrent trainings for AWWs to ensure the fidelity in MTELP+ delivery.

Conclusion and Recommendations

Promoting use of mother tongue as a medium of instruction or as one of the language for communication with gradual exposure to additional languages promotes a strong foundation for language and literacy competence in early years. However opportunities for an equitable

and inclusive environment continues to be seen as one of the major limitations, especially in the far reached areas of India. While extensive evidence informs the benefits of being linguistically and contextually responsive to indigenous populations the shifts in practice are not implemented with fidelity. Consequently children are immersed in a preschool environment where the language spoken is barely understood by them. With limited opportunities for preparation of teachers and meaningful engagement with families the children end up in a legacy of non-productive practices resulting in academic vulnerabilities with increased learning gaps that continue to widen as children progress in higher grades. Consistent efforts promoting a strong and equitable environment is critical to break this vicious cycle to ensure meaningful transformation of programme practice to the late exit bilingual model (Bender et. al., 2005). This requires continuous capacity building of teachers empowering them the understanding of language and literacy pedagogy in early years and supporting appropriate transitions to an unfamiliar language.

The NEP 2020's vision of promoting equitable and inclusive education aligns closely with Sustainable Development Goal 4 of achieving quality education. While the use of home languages, respect for diversity and local context the policy aims to foster an effective learning environment, encouraging early literacy in a multilingual context equips children with competencies required for lifelong learning and success. However it is crucial to support children learn in their mother tongue as medium of instruction with addition to L2 in a phased manner.

Effective implementation of the policy will require devising meaningful strategies to align with appropriate learning experiences for children. These will mandate continuous empowerment of teachers through experiential training programmes both at time of induction and refresher courses which build their knowledge of language and literacy pedagogy for foundational stage. These training programmes will build their knowledge in promoting appropriate language teaching practices focusing on home languages with timely exposure in familiarizing additional languages. Additionally supportive supervision and monitoring will be crucial to ensure ongoing feedback and guidance.

Identifying suitable members from indigenous communities familiar with children's home language can be trained to work as teachers for preschool children and support development

of play materials and educational resources to reflect the culture, context and language of children. This will support developing appropriate teaching learning materials and books for children in their mother tongue and other languages. Simultaneously community mobilization and collaboration with parents will help them understand the importance of developing competence in home language to ensure successful transition to learning of additional languages. Increased participation and knowledge of parents and community, will help create an amiable environment for their children and develop a greater and sustained commitment to help children strengthen their early literacy skills.

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